

## Jia Wang

### Curriculum Vita

#### Address:

NOAA Great Lakes Environmental Research Laboratory (GLERL)  
4840 S. State Road  
Ann Arbor, MI 48108, USA

Phone: 734-741-2281  
Fax: 734-741-2055  
E-mail: Jia.Wang@noaa.gov

URL: <http://www.glerl.noaa.gov>

Research Profile: <http://www.glerl.noaa.gov/about/pers/profiles/wang.html>

Great Lakes Coastal Forecasting System (including ice): <http://www.glerl.noaa.gov/res/glcfs/>

Great Lakes Ice Products: <http://www.glerl.noaa.gov/data/ice/>;

Ice Data: <http://www.glerl.noaa.gov/data/pgs/glice/glice.html>

#### Education

Ph.D., 1993, Atmospheric and Oceanic Sciences, McGill University, Canada  
(*Thesis: Interannual variability of sea-ice cover in Hudson Bay, Baffin Bay and the Labrador Sea, and numerical simulation of ocean circulation and sea-ice cover in Hudson Bay; Supervisors: L.A. Mysak and G. Ingram*)

Ph.D., 1987, Oceanography, Institute of Oceanology, Chinese Academy of Sciences  
(*Thesis: Numerical modeling and theoretical studies of ocean circulation and coastal trapped waves in the East China Sea; Supervisors: H-L Mao and Y-L Yuan*)

M.Sc., 1983, Oceanography, Shandong College of Oceanology (now Ocean Univ. of China), Qingdao, China

(*Thesis: A numerical model of the steady-state circulation in the South China Sea; Supervisor: P-G Xi*)

B.Sc., 1980, Oceanography, Shandong College of Oceanology (now Ocean Univ. of China), Qingdao, China

#### **PROFESSIONAL AND ADMINISTRATIVE POSITIONS**

2007 – present: **Physical Scientist/Ice Climatologist and Team Leader, NOAA Great Lakes Environmental Research Laboratory (GLERL), Ann Arbor, Michigan; Also adjoint professor of School of Fisheries and Marine Sciences, University of Alaska Fairbanks**

**Responsibilities:** As team (Ice Climate Modeling Theme) lead at GLERL, I lead research projects related to Arctic sea ice and climate change, Great Lakes ice and climate change, and Great Lakes Earth System Model (GLESIM), etc. I supervise 1 federal supporting scientist and 4 research scientists, postdoctoral researchers, and research associates to conduct interdisciplinary research. In this position, over the last 7 years, I sustained an average annual budget of \$250,000-300,000 external research grants (CPO, NASA, NSF, GLRI), excluding my own salary. I also supervised a master student from AOSS, UoM in Applied Climate, and summer intern students.

**Accomplishments:**

- 1) Established Great Lakes ice-climate research projects.
- 2) Developed coupled Great Lakes Ice-circulation Model (GLIM) in the Great Lakes. The lake ice forecast using GLIM has been implemented into the Great Lakes Coastal Forecast System (GLCFS) at GLERL, NOAA since 2009/10 winter: <http://www.glerl.noaa.gov/res/glcfs/>
- 3) Integrated remote sensed ice data and in situ observation into model (model-data fusion studies and data assimilation) and developed ice nowcast/forecast system in all 5 Great Lakes
- 4) Developed statistical analysis capability/tools for understanding climate changes and interactions between cryosphere and atmosphere, oceans, and ecosystem, such as the relationships of lake ice to the NAO and ENSO, etc.
- 5) Developed unstructured-grid FVCOM coupled ice-circulation-ecosystem models in the Great Lakes watershed towards a regional Great Lakes Earth System Model (GLESIM).
- 6) Developed my own coupled Ice-ocean model (CIOM), and coupled CIOM-ecosystem model in the Bering Sea, Chukchi and Beaufort seas, and conduct Arctic climate change studies

2004-2007: **Research Professor and Group Leader of Arctic Modeling Group (equivalent to a division), International Arctic Research Center (IARC), University of Alaska Fairbanks, Alaska**

**Responsibilities:** As group (Arctic Modeling Group) leader at IARC, I oversaw research projects related to Arctic sea ice and climate change, Bering Sea ice-ocean-ecosystem modeling, and Gulf of Alaska, etc. I mentored 2 junior faculty, 8 research scientists, postdoctoral researchers, and research associates to conduct interdisciplinary research. In this position, I sustained an annual budget of more than \$550,000 external research grants, excluding my own salary. I also supervised summer intern students. I was also the Theme Leader of IARC/NSF/JAMSTEC Integration/Synthesis Project with a block funding of 5 millions led by the founding director, Dr. Akasofu.

**Accomplishments:**

- 1) Assisted Dr. Akasofu, the founding director of IARC, to successfully maintain the NSF 5-year block funding of \$5 millions per year for the IARC/NSF/JAMSTEC integration/synthesis project, in which I was the theme leader.
- 2) Established an Arctic climate modeling program at IARC.
- 3) Developed my own Coupled Ice-Ocean Model (CIOM) using remote sensed data in the Bering Sea, Chukchi and Beaufort seas, and pan Arctic Ocean.

- 4) Integrated remote sensed ice data and in situ observation into model (model-data fusion studies and data assimilation).
- 5) Developed statistical analysis capability/tools for understanding climate changes and interactions between cryosphere and atmosphere, oceans, and ecosystem, such as the relationships of sea ice to the Arctic Oscillation and Arctic Dipole Anomaly, etc.

**1998-2004: Senior Research Scientist and Group/Division Leader of Arctic Climate Diagnosis and Modeling Group (equivalent to a division), Frontier Research Center for Global Change (FRCGC), Japan Marine-earth Science and Technology (JAMSTEC), Yokohama, dispatched to International Arctic Research Center (IARC); Also served as an affiliate professor, University of Alaska Fairbanks, Alaska**

**Responsibilities:** As group (Arctic Climate Diagnosis and Modeling Group) leader at FRCGC/IARC, I administered research projects related to Arctic sea ice and climate change, Bering Sea ice-ocean-ecosystem modeling, and global GCM development, etc. I mentored 2 junior faculty, 10 research scientists, postdoctoral researchers, and research associates to conduct interdisciplinary research. In this position, I sustained an annual budget of more than \$300,000 external grants. I supervised graduate students. I was also the polar team leader of IARC/JAMSTEC global climate model development project led by Dr. Matsuno.

**Accomplishments:**

- 1) As the first hired senior scientist and group leader to JAMSTEC/IARC, Alaska, I built everything from a scratch: infrastructure, the computer system, research programs, recruiting faculty/scientists/students, weekly seminar, etc.
- 2) Set up my own research group (Arctic Climate Diagnosis and Modeling) from a scratch and developed my own Coupled Ice-Ocean Model (CIOM) and coupled Physical-Ecosystem Model (PhEcoM) in the Bering Sea, Chukchi and Beaufort seas, and pan Arctic Ocean.
- 3) Integrated remote sensed ice data and in situ observation into model (model-data fusion studies and data assimilation).
- 4) Developed statistical analysis capability/tools for understanding climate changes and interactions between cryosphere and atmosphere, oceans, and ecosystem, such as the relationships of sea ice to the Arctic Oscillation, ENSO, Dipole Anomaly, etc.

**CHRONOLOGICAL LISTING OF POSITIONS**

- |             |   |
|-------------|---|
| 2007-pres.: | Research Scientist (Ice Climatologist), and team leader of Ice Climate and Modeling Team at NOAA GLERL;   |
| 2004-2007:  | Research Professor, Leader of Arctic Modeling Group, Theme Leader of IARC/NSF/JAMSTEC Integration/Synthesis Project, International Arctic Research Center, University of Alaska Fairbanks |

- 1998-2004: Senior Research Scientist, and Leader of Arctic Climate Diagnosis and Modeling Group, Polar Theme Leader of JAMSTEC climate model development project, JAMSTEC, Yokohama, Japan, dispatched to IARC/UAF (as Affiliate Professor), Fairbanks
- 1995-1997: Associate (04/95-04/96) and Senior (04/96-12/97) Research Scientist Rosenstiel School of Marine and Atmospheric Science University of Miami
- 1994-1995: NSERC Postdoctoral Fellow, Bedford Institute of Oceanography Dartmouth, Nova Scotia, Canada
- 1993: Postdoctoral Investigator, Woods Hole Oceanographic Institution Woods Hole, MA
- 1989-1992: Research and Teaching Assistant, Department of Atmospheric and Oceanic Sciences, McGill University, Montreal Canada
- 1988-1989: Visiting Scientist, US Geological Survey, Menlo Park, CA
- 1986-1987: Assistant Scientist, Institute of Oceanology, Chinese Academy of Sciences Qingdao, China

#### Other Affiliate Positions Held

University of Alaska Fairbanks	Affiliate Professor	07/07-present
JPL (Sabbatical)	Visiting Scientist	03/07-08/07
UCLA (Sabbatical)	Visiting Professor	09/06-02/07
University of Alaska Anchorage:	Visiting Professor	2001
Polar Research Institute of China:	Guest Professor	2001-present
Fudan University, Shanghai, China:	Visiting Professor	1998-Present
First Institute of Oceanography, SOA:	Guest Professor	1999-2002

#### Awards and Honors

- NOAA GLERL Director's Award for Scientific Productivity of 2007.
- Outstanding Productivity and Excellence in Science Award of 2000, Frontier Research System for Global Change, JAMSTEC, Tokyo, Japan, 2000.
- State Oceanic Administration (SAO), China: Honorary Ocean Scholar and professor (highest honor), 08/2001

- Polar Research Institute of China: Honorary Guest Professor, 3/2001

### Research Interests

- Physical oceanography including polar regions
- Great Lakes, polar and subpolar climate change (atmosphere, sea ice, oceanography, and ecosystem) and interactions
- Earth system modeling: Global coupled atmosphere-ice-ocean modeling and basin-scale ocean-ice-ecosystem modeling
- Regional/coastal ocean and sea ice dynamics and modeling

### Current Research Grants

1. “Modeling sea ice-ocean-ecosystem responses to climate changes in the Bering-Chukchi-Beaufort seas with data assimilation of RUSALCA measurements,” NOAA, **PI: J. Wang**, co-PIs: Bai, and Hu. 7/2014-6/2015: \$50,000.
2. “Regional Climate (atmosphere-ice-ocean-ecosystem-hydrology) Modeling for Application to Decision Making.” EPA Great Lakes Restoration Initiative (GLRI). **PI: B. Lofgren**, co-PI: **J. Wang**, 7/2014-06/2015: \$321,595
3. “Implications of changing sea ice on phytoplankton and zooplankton biomass and community structure in the Bering Sea.” NASA, **PI: C. Mouw**, Co-PIs: E. D’Sa, J. Goes, H. Gomes, J. Miksis-Olds, and **J. Wang**, extended to 06/2014-05/2015: \$286,946 (My part: 30,000)

### Research Grants in the Past as PI and co-PI

- “Regional Climate (atmosphere-ice-ocean-ecosystem-hydrology) Modeling for Application to Decision Making.” EPA Great Lakes Restoration Initiative (GLRI). **PI: B. Lofgren**, co-PI: **J. Wang**, 7/2010-06/2013: \$1,358,000
- “Implications of changing sea ice on phytoplankton and zooplankton biomass and community structure in the Bering Sea.” NASA, **PI: C. Mouw**, Co-PIs: E. D’Sa, J. Goes, H. Gomes, J. Miksis-Olds, and **J. Wang**, 06/2010-05/1013: \$1,500,000 (Wang: 50K/year for 3 yrs)
- “Measuring and Modeling the Impact of Ice on Surface Fluxes, Thermal Structure and Circulation in Lake Erie.” NSF, **PI: D. Beletsky**; NOAA co-colaborators: Nathan Hawley; **Jia Wang**, 10/09-09/13: \$629,396
- “Modeling sea ice-ocean-ecosystem responses to climate changes in the Bering-Chukchi-Beaufort seas with data assimilation of RUSALCA measurements,” NOAA, **PI: J. Wang**, co-PIs: Mizobata, Bai, and Hu. 7/2012-6/2014: \$166,000.

- “Modeling sea ice-ocean-ecosystem responses to climate changes in the Bering-Chukchi-Beaufort seas with data assimilation of RUSALCA measurements,” NOAA, **PI: J. Wang**, co-PIs: Tal Azer, Leo Oey, Mizobata, Bai, and Hu. 7/2007-6/2012: \$1,225,399.
- “Collaborative Research: The Impacts of Arctic Storms on Landfast Ice Variations,” NSF, **PI: Y. Yu**; **co-PIs: H. Eicken, J. Maslanik, J. Wang**, 2007-2011: \$560,000.
- “Computing Capability Upgrade for the Arctic Modeling Group of NOAA GLERL for pan Bering-Beaufort-Chukchi Seas Coupled Ice-Ocean Modeling,” NOAA-Office Arctic Research, **PI: J. Wang**, 6/08-5/09, \$30,000.
- “Linking the Dipole Anomaly to Bering inflow (north-south connection), and its impacts on sea ice in the Beaufort and Chukchi seas,” NOAA-Office Arctic Research, **PI: J. Wang**, 7/08-6/09, \$30,000.
- “Pacific Arctic (Country) Group (PAG) Model-Data Fusion Workshop,” NOAA, **PI: J. Wang**, 10/07-9/08, \$70,000.
- “Modeling Study on the Response of Lower Trophic Level Production to Climate Change” supported by North Pacific Research Board (NPRB). **PI-M. Jin, Co-PI: C. Deal and J. Wang**; 6/2006-5/2008: \$149,547
- “Development and Validation of Polar Ocean Ecosystem Model by Using Satellite Data.” Japan Aerospace and Exploration Agency (JAXA), **PI: J. Wang**, 2005-2008, \$126,348/year
- “Sea Ice-Ocean-Oilspill Modeling System (SIOMS) for the Nearshore Beaufort and Chukchi Seas: Improvement and Parameterization (Phase II).” Minerals Management Service (MMS), **PI: J. Wang**, 5/2004-11/2007: \$568,249.
- “Development of Coupled Ice-Ocean-Ecosystem Models in Polar and Subpolar Seas.” Japan Marine Science and Technology Center/IARC (JAMSTEC)/IARC, **PI: J. Wang**, 2004-2006, \$102,442/year
- “Assessment of Coupled CCSR/NIES/FRCGC Atmosphere-Ice-Ocean Climate Model for the 20<sup>th</sup> Century Climate.” Japan Marine Science and Technology Center/IARC (JAMSTEC)/IARC, **PI: J. Wang**, 2004-2006, \$100,424/year
- “Workshop on Hydrological Modeling for Freshwater Discharge from the Alaska Arctic Coast.” Minerals Management Service (MMS), **PI: J. Wang**, 5/2004-9/2005, \$77,844
- “Nowcast/Forecast Models of Ice-Ocean-Oil Spill System in the Beaufort Sea.” Minerals

Management Service (MMS), (Phase I) PI: J Wang, 2000-2004, \$400,000

- “Workshop on Small-Scale Ice-Ocean Modeling in the Nearshore Chukchi and Beaufort Seas.” Minerals Management Service (MMS), PI: J Wang, 2002-2003, \$68,000
- “Arctic Ocean Model Intercomparison Project (AOMIP)” National Science Foundation (NSF/IARC), PI-A. Proshutinsky; 2000-2004, \$750,000; Role on Project: co-PI
- “3-D Coupled Biological-Physical Model of Prince William Sound, Alaska.” Oil Spill Recovery Institute (OSRI), Alaska, PI: J Wang, 1999-2002, \$150,000
- “Wavelet Analysis and EOF Analysis of Arctic Climate Data” NOAA/CIFAR, PI: J Wang, 1999-2001, \$50,000
- “3-D Ocean State Simulations from 1995-98 in Prince William Sound, Alaska.” Exxon Valdez Oil Spill Trustee Council (EVOSTC), PI: J Wang, 1998-2001, \$160,000
- “Modeling Ice-Ocean Climate Change in the pan Arctic and North Atlantic Ocean.” Dept. of Fisheries and Oceans of Canada, PI: J Wang, 1998-2001, \$89,000.
- “Coupled Ice-Ocean Modeling in the Labrador Sea.” Dept. of Fisheries and Oceans of Canada, PI: J Wang, 1999-2000, \$20,000.
- “Ocean Modeling of Ocean Circulation in Prince William Sound, Alaska.” Exxon Valdez Oil Spill Trustee Council (EVOSTC), Role on Project: co-PI, PI: C. Mooers, 1995-1997, \$200,000
- “Modeling of Ocean Circulation in the Sea of Japan.” Office of Naval Research (ONR), Role on Project: co-PI, PI: C. Mooers, 1995-1997, \$180,000

Previous Grant and Contract Funding Agencies

National Science Foundation (NSF)  
National Oceanic and Atmospheric Administration (NOAA)  
National Aeronautics and Space Administration (NASA)  
Environmental Protection Agency (EPA)  
Minerals Management Service (MMS)  
Office of Naval Research (ONR)

North Pacific Research Board (NPRB)  
Exxon Valdez Oil Spill Trustee Council (EVOSTC)  
Oil Spill Recovery Institute (OSRI)

Department of Fisheries and Oceans (DFO) of Canada  
Japan Agency for Marine-earth Science and Technology Center (JAMSTEC)  
Japan Aerospace and Exploration Agency (JAXA)

### Professional Memberships

American Geophysical Union;  
International Association of Great Lakes Research  
International Association for Physical Sciences and Oceans (IAPSO)

### Professional Activities

- Guest Editor for the Special Issue of Model-Data Fusion Study in the Arctic and Subpolar Seas in Chinese Journal of Polar Science, December 2008.
- Proposal reviewer for the National Science Foundation, NOAA, NASA, North Pacific Research Board, Exxon Valdez Oil Spill Trustee Council, the United Kingdom Natural Science and Engineering Research Council, the Canadian Natural Science and Engineering Research Council, and the National Science Foundation of China.
- Manuscript reviewer for major scientific journals, such as, *Nature*, *Science*, *Geophys. Res. Lett.*, *J. Phys. Oceanogr.*, *J. Geophys. Res.*, *J. Climate*, *Monthly Weather Review*, *J. of Atmos. and Oceanic Technology*, *J. Marine Systems*, *Deep-Sea Res*, *Prog. Oceanogr.*, *Continental Shelf Res.*, *Estu. Coast. Shelf Sci.*, *Advances in Atmospheric Sciences of China*, *Chinese J. of Limnol. Oceanogr.*, *J. Oceanography of Japan*, *Acta Oceanologia Sinica*.
- International Scientific Committee on International Workshop on Modeling the Ocean (IWMO), 2015-present
- International Steering Member of Ice Committee of IAHR (International Association of Hydro-Environment and Engineering Research), 2012-present.
- Member of Pacific Arctic Group (PAG), and also the Modeling Coordinator of PAG modeling and model-data synthesis, 2007-present
- Member of NOAA-GLERL IT Committee, 2010-present.
- Panelist for NASA Terra and Aqua Ocean Project/proposal review, July 13-16, 2010, Dulles, VA.
- Panel member of the International Scientific Advisory Committee in Computer Modelling of Seas and Coastal Regions, Wessex Institute of Technology, UK, 1997-2000
- Overseas Academic Committee of the Key Laboratory of State of Oceanic Administration (SOA), China, 1998-2000

### Other Significant Experience

#### ***Organizer and Chair of Workshops:***

- 23rd IAHR International Symposium on Ice, May 31-June 3, 2016, Ann Arbor, MI
- NASA/GRC-NOAA/GLERL Workshop on Great Lakes Research, Ann Arbor, MI, September,



2010

- Pacific Arctic (Country) Group (PAG) Model-Data Fusion Workshop, Sanya, China, Feb. 18-20, 2008.
- International Workshop on Polar-Global Climate Modeling: Connections and Interplay. Fairbanks, AK, June 14-16. 2006.
- Workshop on Hydrological Modeling for Freshwater Discharge from the Alaska Arctic Coast. Fairbanks, AK, October 7-8, 2004
- Second IARC/CAMP-FRSGC Collaboration Workshop on Arctic Climate Modeling, Yokohama Institute for Earth Science, Yokohama, Nov. 5, 2003.
- First IARC/CAMP-FRSGC Collaboration Workshop on Arctic Climate Modeling, Yokohama Institute for Earth Science, Yokohama, June 10, 2003.
- International Workshop on Small-Scale Sea Ice-Ocean Modeling for the Nearshore Beaufort and Chukchi Seas, Fairbanks, AK, August 7-9, 2002

***Chairperson of Sessions at Conferences/Meetings:***

- 2016 AGU Ocean Science Meeting, New Orleans, LS. Session: Comparing physical processes of large lakes and coastal semi-enclosed seas, Feb. May 22-26, 2016
- 2014 6th International Workshop on Modeling the Ocean (IWMO), Session 13: Numerical Techniques and Approaches in Ocean Modeling, June 23-26, 2014, Halifax, NS, Canada
- 2014 57th Annual Conference of IAGLR in Hamilton, ON, Session: Water and its Context: Earth System Approaches to the Great Lakes, May 26-29, 2014
- 2013 56th Annual Conference on IAGLR in West Lafayette, IN., Session: Changes in Atmosphere, ice, land in Large Lakes, June 2-6, 2013
- 2012 The 21<sup>st</sup> IAHR International Symposium on Ice in Dalian, China, Sessions: Lake Ice I: Physical environments under lake ice; Water Quality and Ecology. June 10-15, 2012.
- 2012 IAGLR Annual Meeting in Cornwall, Canada. Session: Climate variability in Large Lakes Mediated by Continental-to-Global Forcing. May 30-June 3.
- 2011 IAGLR Annual Meeting in Duluth, MN, Session: Climate variability in Large Lakes Mediated by Continental-to-Global Forcing. May 30-June 3.
- 2010 AGU Fall Meeting in San Francisco, CA, Session: GC12B. Decadal-Scale Arctic Climate Variability: Observations and Modeling I
- 2010 IAGLR Annual Meeting in Toronto, ON, Session: Climate variability in the Great Lakes region and its impacts on other physical and ecosystems subsystems. May 17-21.
- 2010 AGU Ocean Science Meeting in Portland, OR, Session IT27: Arctic sea ice minima and its impacts on the atmosphere and ocean circulation. Feb. 22-25.
- 2009 International Association for Great Lakes Research (IAGRL) Meeting in Toledo, OH, Session: Great Lakes Region Climate Change. May18-22
- 2008 AGU Ocean Sciences Meeting in Orlando, FL, Session: Arctic climate and sea ice: interactions with the atmosphere, and ocean.
- 2006 AGU Fall Meeting in San Francisco, CA Dec. 2006 Session: Arctic sea ice interactions with the atmosphere, ocean, and ecosystems.
- 2004 The Second International Symposium on Polar Sciences of China. October 15-17, Beijing
- 2004 International Chinese Ocean-Atmosphere Conference. June 28-30, Beijing

- 2001 International China-Norway Symposium of Polar Sciences, Shanghai, China, August
- 2000 International Symposium of Coastal Seas in Response to Climate Change, Qingdao, China, August
- 2000 International Conference of Computer Modelling of Seas and Coastal Regions, Greece, June
- 1999 The US-China Workshop on Arctic Computer Modeling and Observations, Qingdao, May
- 1997 International Conference of Remote Sensing and Ocean Modeling, Beijing, July

***Leadership and Administration Duties:***

- Group leader of Arctic Climate Diagnosis and Modeling Group, FRSGC/JAMSTEC, 1998-2004. At the beginning of the establishment of the Frontier Research System for Global Change (FRSGC) Program at IARC/UAF, I was the first senior scientist hired as subgroup leader in January 1998 to set up the IARC-Frontier infrastructure, such as the computer system, research programs, recruiting scientists, weekly seminar, etc. I organized an IARC seminar once a week. Our regular seminar has been year-round and well attended. As group leader, I supervised 12 employees and postdocs/researchers.
- Leader of Arctic Modeling Group (a division at the center); Theme Leader for IARC/NSF/JAMSTEC Integration/Synthesis Program, International Arctic Research Center, 2004-2007. I supervised 10 employees and postdocs/researchers.
- Leader of Ice Climate and Modeling Team, NOAA GLERL, 2007-present. I supervised 7 employees and postdocs/researchers.

***Oceanographic Cruises:***

- 1984: East China Sea: cold summer water mass
- 1985-86: China First Northwestern Pacific Cruise in TOGA: air-sea interactions
- 1988: San Francisco Bay: tidal current and tidal gauge recovery
- 1993: Western Gulf of Maine: physical-biological processes
- 1994: Labrador Sea: dense water formation
- 1996: Prince William Sound (Sound Ecosystem Assessment): physical and biological
- 2000: JAMSTEC Mirai Bering-Chukchi Seas Cruise: physical and biogeochemical studies of water mass analysis
- 2007: Hokkaido University T/S Oshoro-Maru IPY cruise to the Bering and Chukchi Seas for physical and ecosystem measurement
- 2008: Hokkaido University T/S Oshoro-Maru IPY cruise to the Chukchi and Beaufort Seas for physical and ecosystem measurement

**Postdocs and Graduate students instructed**

**Postdocs/Research Associates:**

**Past:** Dr. Jun Takahashi (1999-2002), Dr. Meibing Jin (1998-2000), Dr. H. Kitauchi (1998-2004), Dr. T. Watatuchi (1998-2004), Dr. Qinzhen Liu (1999-2001), Dr. Bingyi Wu (2000-

2002), Dr. E. Watanabe (2006), Dr. Sheng Zhang (2004-2007), Dr. Kohei Mizobata (2005-2008), Mr. Yi Yang (2011), Dr. Lin Luo (2011- 2012), Mark Rowe (2012-2014)

**Current Research Team:** Mr. Haoguo Hu (2004-current), Dr. Xuezhi Bai (2008-current), Mr. Ray Assel (2010-current), Dr. Ayumi Fujisaki (2010-current), Anne Clites (2007-present), Wei Hu (2013-2014), Xueming Zhu (2013-2014)

**Graduate students:** Congbiao Liu (2003-2005, UAF), Zhedong Zhang (1998-2000, UAF), Linong Yan (2000-2002, UAF), Elizabeth McBride (2012-2013, UMich)

**Ph.D. Thesis Committee:** Rawshan Ara Muna (UAF, 2004), K. Mizobata (Hokkaido University, 2002-05), T. Iida (Hokkaido University, 2003-06)

**Summer Interns:** William Wang (2006), Stephen Walterscheid and Han Sang Kim (2010), Zifan Yang and James Kessler (2015)

**Visiting Scientists hosted/supported:** Dr. Bob Pickart (WHOI, 2005-06), Dr. Markus Meier (Sweden, 2002), Dr. Jari Haapala (Finland, 2003), Dr. Charles Tang (BIO, Canada, 2003), Dr. R. Gerdes and C. Koberle (AWI, Germany, 2003), Dr. F.J. Saucier (DFO, Canada, 2002), Dr. Jingping Zhao (OUC, China, 2001), Dr. Dongxiao Wang (SCSIO/CAS, China, 2001, 2003, 2011), Dr. Ping Shi (SCSIO/CAS, China 2002), Dr. Lijun Han (IO/CAS, China, 2000-2001), Dr. Z. Wan (Xiamen University, China, 2001), Dr. Xiao-Yi Yang (2007), Dr. Ling Du (2008), Dr. Yan Du (SCSIO/CAS, China, 2013), Dr. Zhiyou Jing (SCSIO/CAS, China, 2013)

## Outreach

1) Giving a lecture on Arctic climate change and sea ice decline, West Valley High School, 11th grader, Fairbanks, Alaska, 2005.

2) Coaching Ann Arbor Public Middle Schools (Slauson and Clague Middle Schools) Science Olympiad, topic: Meteorology, 2012-13, 2013-14, participating in regional competition and Michigan State Tournament; Oceanography, 2014-15.

## Teaching Experience

<b>UAF: Instructional Activities</b>						
Semester	Course Name, Number & Title	Credits	Contact Hours (Lecture & lab, i.e. 3&0)	Students # of	Type	Shared

2001	CE 674: Waves, Tides, and Ocean Processes	4	1	10	Class room	Prof. Orson Smith (UAA)
2002	STAT 482: Multivariate Analysis	4	1	8	Class room	Prof. S. Zhang (UAF)
2005	ATM 693: Climate Journal Club	1	1	12	Class room	Prof. I. Polyakov, U. Bhatt (UAF)

Course	Level	Credit		Institution
Fortran Language (with computer lab)	200	3	taught	Ocean Univ. China
Physical oceanography	200	4	taught	same
Fluid mechanics	200	4	taught	same
Numerical methods (with computer lab)	300	3	taught	same
Statistics	200	3	taught	same
Numerical analysis of partial differential equations (with computer lab)	500	4	TA	same
Numerical analysis of fluid mechanics (with computer lab)	500	4	TA	McGill
Numerical methods (with computer lab)	500	3	TA	McGill

During I was employed at the University of Miami, I was invited to give

Short course on advance numerical methods in fluid dynamics 1 taught

Short course on 3-d ocean circulation model and computer simulation 2 taught

I was a guest professor/visiting professor at five universities/institutions in China and the US. I am frequently invited to give seminars/short courses in computer modeling/simulation.

### Publications:

Peer-reviewed papers and book chapters: 115 (H-index=28):

[https://scholar.google.com/citations?hl=en&user=rBNWqlwAAAAJ&view\\_op=list\\_works](https://scholar.google.com/citations?hl=en&user=rBNWqlwAAAAJ&view_op=list_works)

Conferences Proceedings: 12;

Internal reports: 21

### **Manuscripts submitted or in preparation**

Wang, J., X. Bai, M Ikeda, B Wu, J Bratton, Y Yu, and CH Greene, 2015, Accelerating Arctic summer sea ice decline driven by Dipole Anomaly. *Geophys. Res. Lett.*, (submitted)

Luo, L., J. Wang, T. Hunter, D. Wang, and H. Vanderploeg, 2015. Modeling spring-summer phytoplankton bloom in Lake Michigan with and without riverine nutrient loading. *J. Great Lakes Res.* (submitted)

## A: Peer-reviewed Publications

### Year 2016:

115) Wang, J., X. Bai, H. Hu, A. Fujisaki, D. Beletsky, and R. Assel, G. Leshkevich, A. Clites, G. Lang, E. Anderson, N. Hawley, B. Lofgren, S. Ruberg, B. Qin, and L. Luo, 2015. Great Lakes ice and climate: From research to forecast. EOLSS (Encyclopedia of Life Support Systems) (in press)

114) Lei, R., P. Heil, J. Wang, Z. Zhang, Q. Li, and N. Li, 2016, Sea ice kinematic characteristics in the Arctic outflow region derived from buoy data. *Polar Res.* 35, 22658, <http://dx.doi.org/10.3402/polar.v35.22658>

### Year 2015:

113) Pisareva, M.N., R.S. Pickart, K. Iken, E.A. Ershova, J.M. Grebmeier, L.W. Cooper, B.A. Bluhm, C. Nobre, R.R. Hopcroft, H. Hu, J. Wang, C.J. Ashjian, K.N. Kosobokova, and T.E. Whitledge. 2015. The relationship between patterns of benthic fauna and zooplankton in the Chukchi Sea and physical forcing. *Oceanography* 28(3):68–83, <http://dx.doi.org/10.5670/oceanog.2015.58>.

112) Wood, K.R., J. Wang, S.A. Salo, and P. Stabenro. 2015. The climate of the Pacific Arctic during the first RUSALCA decade: 2004–2013. *Oceanography* 28(3): 24–35, <http://dx.doi.org/10.5670/oceanog.2015.55>.

111) Rowe, M., E. Anderson, J. Wang, and H. Vanderploeg, 2015. Modeling the effect of invasive quagga mussels on the spring phytoplankton bloom in Lake Michigan. *J. Great Lakes Res.*, 41:17 pp. DOI:10.1016/j.jglr.2014.12.018113)

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- 10) Wang, J., L.A. Mysak and R.G. Ingram, 1994b. A 3-D numerical simulation of Hudson Bay summer ocean circulation, *J. Phys. Oceanogr.*, 24(12): 2496-2514. (28)
- 9) Wang, J., L.A. Mysak and R.G. Ingram, 1994a. Interannual variability of sea-ice cover in Hudson Bay, Baffin Bay and the Labrador Sea, *Atmosphere-Ocean*, 32(2): 421-447. (73)
- 8) Wang, J. and Y. Yuan, 1994. Double Kelvin waves along the Okinawa Trough in the East China Sea-I: Analytical solutions and observations, *Acta Oceanologica Sinica*, 13(1): 1-21.
- 7) Wang, J. and R.T. Cheng, 1993. On low-pass digital filters in oceanography, *Acta Oceanologica Sinica*, 12(2): 183-196.
- 6) Wang, J., R.G. Ingram and L.A. Mysak, 1991. Variability of internal tides in the Laurentian Channel, *J. Geophys. Res.*, 96: 16,859-16,875. (9)
- 5) Ford, J.M., J. Wang and R.T. Cheng, 1990. Predicting the vertical structure of tidal current and salinity in San Francisco Bay, California, *Water Resources Res.*, 26(5): 1,027-1,045. (16)
- 4) Wang, J., M. Feng and Y. Yuan, 1989, Preliminary study of heat transport in the southern Yellow Sea, China, *Oceanol. Limnol. Sinica*, 20(3): 274-280 (in Chinese with an English abstract).
- 3) Wang, J. and Y. Yuan, 1988. Numerical modelling of wintertime circulation in the East China Sea, *Chinese J. Oceano. Limno.*, 6(4): 300-319.
- 2) Wang, J., Y. Yuan and Z. Pan, 1988, Numerical study and analysis of continental shelf waves in the East China Sea, *Acta Oceanologica Sinica*, 10(6): 666-677 (in Chinese).
- 1) Wang, J., 1985, A numerical model of the steady-state circulation in the South China Sea, *Journal of Shandong College of Oceanology*, 15(3): 22-32 (in Chinese with an English abstract).

## **B: Other publications**

### **Papers in non-Refereed Conference Proceedings:**

- 1) Wang, J., L.A. Mysak and R.G. Ingram, 1991, Interannual variability of the atmospheric circulation and sea-ice cover in the Hudson Bay-Baffin Bay-Labrador Sea region, 1953-88. In *Proceedings of the Fifth Conference on Climate Variations*, Oct. 14-18, Denver, Colo., American Meteorological Society, Boston, Mass, pp 358-361.
- 2) Wang, J. and C.N.K. Mooers, 1996. Modelling Prince William Sound ocean circulation. In *Conference on Coastal Oceanic and Atmospheric Prediction*, Atlanta, Jan. 28-Feb. 2, American Meteorological Society, Boston, pp 36-43.



- 3) Mooers, C.N.K. and Wang, J., 1996. The second generation of the Strait of Florida nowcast/forecast system. In *Conference on Coastal Oceanic and Atmospheric Prediction*, Atlanta, Jan. 28-Feb. 2, American Meteorological Society, Boston, pp 28-35.
- 4) Wang, J. and B. Wu, 2001. Impacts of winter Arctic Oscillation on the Siberian High, the East Asian winter monsoon, and sea-ice extent. *Sixth Conference on Polar Meteorology and Oceanography*, San Diego, p2.6.
- 5) Shapiro, I., Wang, J., R. Colony and M. Ikeda, 2001. Inter-seasonal and inter-decadal variability of freshwater and heat content in the Arctic Ocean. *Sixth Conference on Polar Meteorology and Oceanography*, San Diego, p3.6.
- 6) Jin, M., Wang, J., F.J. Saucier and M. Ikeda, 2001. General circulation and transport in the pan Arctic and North Atlantic Ocean. *Sixth Conference on Polar Meteorology and Oceanography*, San Diego, p1.25.
- 7) Ikeda, M., J. Wang, A. Makshtas, 2002. The Arctic sea ice and global warming. *Kaiyo (The Ocean) Monthly*, 34(2), 875-878. (in Japanese)
- 8) Wang, J., M. Ikeda, R. Colony, X. Zhang, 2002. Quasi-decadal variability of sea ice in the Arctic Ocean. *Kaiyo (The Ocean) Monthly*, 34(2), 865-849. (in Japanese)
- 9) Takahashi, J. and J. Wang, 2002. Mechanism for dense water transport along Arctic continental shelf. *Kaiyo (The Ocean) Monthly*, 34(2), 831-834. (in Japanese)
- 10) Wang, J., H. Hu, and X. Bai, 2010. Modeling Lake Erie ice dynamics: Process studies. Proceedings of 20<sup>th</sup> IAGR International Symposium on Ice, Lahti, Finland, June 14-18, 2010.
- 11) Wang, J., X. Bai, A. Fujisaki-Manome, H. Hu, and D. Beletsky, 2014. Great Lakes Ice and Climate: From Research to Forecast. Proceedings of 22<sup>th</sup> IAGR International Symposium on Ice, Singapore, August 11-15, 2014.
- 12) Wang, J., X. Bai, J. Bratton, B. Wu, and C.H. Greene, 2014. Accelerating Arctic Summer Sea Ice Decline Driven by the Dipole Anomaly. Proceedings of 22<sup>th</sup> IAGR International Symposium on Ice, Singapore, August 11-15, 2014.

### **Internal Reports:**

- 1) Wang, J. and L.A. Mysak, 1991, Climatic atlas of seasonal sea-level pressure and sea-ice concentration in the Hudson Bay-Baffin Bay-Labrador Sea region, 1953-88, C<sup>2</sup>GCR Report No. 91-5, McGill Univ., Montreal, 103 pp.
- 2) Mysak, L.A. and J. Wang, 1991, Climatic atlas of seasonal and annual Arctic sea-level

- pressure, SLP anomalies and sea-ice concentration, 1953-88, C<sup>2</sup>GCR Report No. 91-14, McGill Univ., Montreal, 194 pp.
- 3) Wang, J., 1993 Interannual variability of sea-ice cover in Hudson Bay, Baffin Bay and the Labrador Sea, and numerical simulation of ocean circulation and sea-ice cover in Hudson Bay, Ph.D. Thesis (also C<sup>2</sup>GCR Report No. 93-2), McGill University, Montreal, 162 pp.
  - 4) Mysak, L.A., R.G. Ingram and J. Wang, 1994, Anomalous sea-ice extent in Hudson Bay, Baffin Bay and the Labrador Sea during the simultaneous ENSO and NAO episodes of 1972/73 and 1982/83, C<sup>2</sup>GCR Report No. 94-8, McGill Univ., Montreal, 24 pp.
  - 5) Wang, J., A. van der Baaren and L.A. Mysak, 1995, A principal component analysis of gridded global sea-level pressure, surface air temperature and sea-ice concentration in the Arctic region, 1953-1993, C<sup>2</sup>GCR Report No. 95-4, McGill Univ., Montreal, 22 pp+figures+Fortran source programs.
  - 6) Wang, J., 1999. A nowcast/forecast system for coastal ocean circulation (NFSCOC). International Arctic Research Center-Frontier Research System for Global Change. IARC/Frontier Tech. Rep. No. 99-1. University of Alaska Fairbanks, 97pp.
  - 7) Wang, J. and M. Jin, 2002. A 3-D coupled biological-physical model of the ecosystem in Prince William Sound, Alaska., Oil Spill Recovery Institute, OSRI Final Report, March 2002, Cordova, Alaska, 38pp.
  - 8) Wang, J., and M. Jin, 2002. 3-D Ocean State Simulations for Ecosystem Application from 1995-1998 in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 00389), Chugach Development Corporation, Anchorage, Alaska, 38pp.
  - 9) Wang, J., Q. Liu, M. Jin, 2002. A nested coupled ice-ocean model for the Beaufort Sea. Annual Report No. 8, University of Alaska, MMS/Alaska OCS Region, Anchorage, Dept. of the Interior, pp80-94.
  - 10) Wang, J., Q. Liu and M. Jin, 2002. A User's Guide for a Coupled Ice-Ocean Model (*CIOM*) in the Pan-Arctic and North Atlantic Oceans. International Arctic Research Center-Frontier Research System for Global Change, Tech. Rep. 02-01, 65 pp.
  - 11) Wang, J., C. Deal, Z. Wan, M. Jin, N. Tanaka and M. Ikeda, 2003. *User's Guide for a Physical-Ecosystem Model (PhEcoM)* in the Subpolar and Polar Oceans. International Arctic Research Center-Frontier Research System for Global Change, Tech. Rep. 02-02, 69 pp.
  - 12) Jin, M. and J. Wang, 2003. Implementation of an Ocean Circulation Model in GOA: A transition from SEA to GEM, *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 02603). Chugach Development Corporation, Anchorage, Alaska.
  - 13) Wang, J., 2003. Proceedings of a Workshop on Small-Scale Sea-Ice and Ocean Modeling

(SIOM) in the Nearshore Beaufort and Chukchi Seas. Final Report, Coastal Marine Institute, University of Alaska, OCS Study MMS 2003-043, 56pp.

- 14) Wang, J., 2005. Proceedings of a Workshop on Hydrological Modeling of Freshwater Discharge from Alaska's Arctic Coast. Final Report, Coastal Marine Institute, University of Alaska, OCS Study MMS 2005-xxx, 68pp.
- 15) Wang, J., K. Mizobata, M. Jin, and H. Hu, 2007. Sea Ice-Ocean-Oilspill Modeling System (SIOMS) for the Nearshore Beaufort and Chukchi Seas: Parameterization and Improvement (Phase II), Coastal Marine Institute, University of Alaska, OCS Study MMS 2007 Annual Report, 35 pp.
- 16) M.A. Quigley, C.E. Sellinger, S.B. Brandt, D.M. Mason, J. Wang, and C. DeMarchi, 2009a, IMPACT OF CLIMATE CHANGE ON THE GREAT LAKES ECOSYSTEM: A NOAA SCIENCE NEEDS ASSESSMENT WORKSHOP TO MEET EMERGING CHALLENGES, JULY 29-31, 2008, FULL FINAL REPORT, NOAA Technical Memorandum GLERL-147a, 58pp
- 17) S.T. Joseph, L.A. Chaimowitz, R.A. Sturtevant, D.M. Mason, C.E. Sellinger, J. Wang, and C. DeMarchi, and S.B. Brandt, 2009b, IMPACT OF CLIMATE CHANGE ON THE GREAT LAKES ECOSYSTEM: A NOAA SCIENCE NEEDS ASSESSMENT WORKSHOP TO MEET EMERGING CHALLENGES - SUMMARY REPORT, NOAA Technical Memorandum GLERL-147b, 58pp
- 18) Wang, J., K. Mizobata, M. Jin, and H. Hu, 2010. Sea Ice-Ocean-Oilspill Modeling System (SIOMS) for the Nearshore Beaufort and Chukchi Seas: Parameterization and Improvement (Phase II), Coastal Marine Institute, University of Alaska, Final Report, OCS Study MMS 2008-021, 86 pp.
- 19) Bai, X., J. Wang, C. Sellinger, A. Clites, and R. Assel, The impacts of ENSO and AO on the Interannual variability of Great Lakes ice cover, NOAA Technical Memorandum GLERL-152, 44 pp. 2010.
- 20) Wang, J., R.A. Assel, S. Walterscheid, A. Clites, and X. Bai, 2012. Great lakes ice climatology update: winter 2006 – 2011 description of the digital ice cover data set, NOAA Technical Memorandum GLERL-155, 37 pp. 2012.
- 21) Assel, R.A, J. Wang, A. Clites, and X. Bai, 2013. Analysis of Great Lakes Ice Cover Climatology: Winters 2006-2011, NOAA Technical Memorandum GLERL-157, 27 pp.

### **C: Abstracts and Presentations:**

#### **1991:**

1. Interannual variability of the atmospheric circulation and sea-ice cover in Hudson Bay, The 25th Annual Congress of CMOS, Winnipeg, Manitoba, June 3-7, Can. Meteorol. Oceanogr. Soc.

2. On the physics in numerical models and applications to St. Lawrence estuary and Hudson Bay, The Workshop on 3-D Numerical Models, Woods Hole, MA, Aug. 5-7, U.S. Geological Survey.

**1992:**

1. Interannual variability of the atmospheric circulation and sea-ice cover in the Hudson Bay-Baffin Bay-Labrador Sea region, 1953-88, The Fifth Conference on Climate Variations, Denver, Co., Oct. 14-18, Amer. Meteor. Soc.
2. A numerical simulation of sea-ice cover in Hudson Bay, The 26th Annual Congress of CMOS, Quebec City, Quebec, June 8-12, Can. Meteorol. Oceanogr. Soc.
3. A numerical simulation of ocean circulation in Hudson Bay, AGU Spring Meeting, Montreal, May 12-16, Amer. Geophys. Union.

**1993:**

1. A 3-d numerical simulation of Hudson Bay summer circulation, The 27th Annual Congress of CMOS, Fredericton, New Brunswick, June, Can. Meteorol. Oceanogr. Soc.
2. Association of sea-ice cover in Hudson Bay and Labrador Sea with ENSO and NAO, data analysis and numerical modeling, Dept of Physical Oceanogr., Woods Hole Oceanographic Institution, July.
3. Evolution of the coastal plume of the Gulf of Maine, Observations and modeling, Workshop of the Regional Association Research of Gulf of Maine (RARGOM), Hanover, NH, Nov.

**1994:**

1. Numerical modeling of coastal plumes in the western Gulf of Maine: a sensitivity study, Dept of Physical Oceanogr., Woods Hole Oceanographic Institution, Jan.
2. Sea-ice observations and modeling in Hudson Bay, Dalhousie University, Nova Scotia, March.
3. Plumes and red tides in the western Gulf of Maine: observations and modeling, Bedford Institute of Oceanography, Nova Scotia, April.
4. Modeling plumes and coastal current using a 3-d model, The 28th Annual Congress of CMOS, May 29-June 3, Ottawa, Can. Meteorol. Oceanogr. Soc.
5. (Invited speaker at 6 institutions and universities of oceanography in China): An introduction to a 3-D coastal ocean model and applications to China seas. Beijing, Qingdao, Guangzhou and Beihai, China, Aug. 1-Sep 30.
6. Progress of observational and numerical studies of sea ice and circulation in Hudson Bay, The 5th Canadian Ice Workshop, St. John's, Newfoundland, Nov.
7. Application of a 3-d primitive-equation model to the Labrador shelves, Memorial Univ., St. John's, Newfoundland, Nov.
8. Modeling mesoscale eddies and meanders using a 3-d ocean model, Bedford Inst. of Oceanogr., Dec.

***Special Series Lecture:***

- “An introduction to a 3-D coastal ocean model and applications to China seas.” Joint NSFC/SOA/CAS-sponsored Invited series lecture at 6 institutions and universities of oceanography in Beijing, Qingdao, Guangzhou and Beihai, China, Aug. 1-30, 1994.

**1995:**

1. On low-pass digital filters in oceanography: theory and application, Dalhousie Univ., Nova Scotia, Jan.
2. Internal tides and mixing in the Laurentian Channel: observations and theory, Maurice Lamontagne Institute (of Oceanography), Mont-Joli, Quebec, Feb.
3. Modeling ocean unstable baroclinic waves and meanders using a 3-D ocean model, RSMAS, Univ. of Miami, Feb.
4. Stability analysis of finite differencing schemes for inertial oscillations in general ocean circulation models. Second International Conference on Computer Modelling of Seas and Coastal Regions-95, Cancun, Mexico, Sep. 8-12.
5. A 3-D Prince William Sound ocean circulation model. 46th Advanced Association of America, Fairbanks, Alaska, Sep 18-22.
6. Anomalous sea-ice extent in Hudson Bay, Baffin Bay and the Labrador Sea during three simultaneous ENSO and NAO episodes of 1972/73, 1982/83 and 1991/92: A decadal scale. Atlantic Oceanographic and Meteorological Laboratory/NOAA, Miami, FL, Oct.

**1996:**

1. A 3-D transport model of Prince William Sound. Exxon Valdez Oil Spill Trusteeship Council, Anchorage, Jan. 16-19.
2. Second-generation Straits of Florida nowcast/forecast system. American Meteorological Society, Atlanta, Jan. 28-Feb. 2.
3. A 3-D numerical modeling of Prince William Sound ocean circulation. American Meteorological Society, Atlanta, Jan. 28-Feb. 2.
4. Three-dimensional perspectives of the Florida Current. Ocean Science Meeting, San Diego, Feb. 12-16.
5. A model comparison of MICOM, POM, GFDL, and QG. MICOM Workshop. March, RSMAS, Univ. of Miami.
6. Modeling mesoscale eddies and baroclinic unstable waves. POM Workshop, June, Princeton University.
7. Model-data comparison in Prince William Sound, Alaska. SEA Workshop, Sep., Seward, Alaska.
8. A 3-D ocean circulation model of Prince William Sound, Alaska. AGU Fall Meeting, San Francisco, Dec. 15-19.

**1997:**

1. A 3-D tidal model for Prince William Sound, Alaska. Coastal Engineering 97: Computer Modelling of Seas and Coastal Regions, June 23-25, 1997, La Coruna, Spain. (invited)
2. A nowcast/forecast system for ocean circulation (in Straits of Florida) and data assimilation. First China-US Remote Sensing Conference, August 11-14, 1997, Beijing, China. (invited)
3. Model-data validation of tidal currents in Prince William Sound. Sep. 23-25, 1997, Valdez, AK., American Association of Advancement of Science 45th Annual Meeting.
4. Seasonal simulation of Prince William Sound circulation. Institute of Marine Science, Univ. of Alaska Fairbanks, Dec. 4 1997.
5. Seasonal simulation of Prince William Sound circulation: sensitivity to freshwater flux. RSMAS/Univ. of Miami, Dec. 11 1997

**1998:**

**Invited:**

1. Seasonal circulation and model-data comparison in Prince William Sound. Exxon Valdez Oil Spill Trustee Council, January 25-28, Anchorage, Jan. 16-19.
2. A theoretical, two-layer, reduced-gravity model for descending dense water flow on continental shelves/slopes. APL, University of Washington, April.
3. A theoretical, two-layer, reduced-gravity model for descending dense water flow on continental shelves/slopes. University of Hokkaido, April.

**Oral:**

1. Seasonal circulation and model-data comparison in Prince William Sound. Exxon Valdez Oil Spill Trusteeship Council, January 25-28, Anchorage.

**1999:**

**Invited:**

1. Arctic Oscillation and Arctic sea ice oscillation. Frontier Research System for Global Change, FRSGC Headquarters, Tokyo, March.
2. Arctic Oscillation and Arctic sea ice oscillation. National Center for Environmental Forecasts, State Oceanic Administration, Beijing, China, April.
3. A theoretical, two-layer, reduced-gravity model for descending dense water flow on continental shelves/slopes. Beijing University, China, April.

**2000:**

**Invited:**

1. Arctic Oscillation and Arctic sea ice oscillation. Alfred-Wegener Institute for Polar Research. Germany, May.
2. A theoretical, two-layer, reduced-gravity model for descending dense water flow on continental shelves/slopes Alfred-Wegener Institute for Polar Research. Germany, May.

**Oral:**

1. Arctic Ocean circulation modelling and freshwater budget. Frontier Research System for Global Change, FRSGC Headquarters, Tokyo, March.
2. Arctic oscillation and Arctic sea ice oscillation. European Geophysical Society Annual Assembly, May, Nice France.
3. Arctic freshwater and modelling. Shelf-Basin Interaction Workshop in the western Arctic. Atlanta, Nov.

**2001:**

**Invited:**

1. Arctic sea ice oscillation: Regional and seasonal perspectives. Frontier Research System for Global Change, FRSGC Headquarters, Tokyo, March (Invited Recipient for Outstanding Achievement Prize).
2. Arctic coupled ice-ocean modelling. State Oceanic Administration, China August (Invited Recipient for SOA Ocean Scholar, the highest prize).
3. A coupled biological-physical model in Prince William Sound, Alaska. International Association of Biological Oceanography (IABO), Argentina, Nov 21-26.
4. A coupled hydrological-ocean model in the Gulf of Alaska. Exxon Valdez Oil Spill Trustee

Council, Anchorage, November 5-6.

**Oral:**

1. Arctic sea ice oscillations and east Asia monsoon. American Meteorological Society/5<sup>th</sup> Conference on Polar Oceanography and Meteorology, San Diego, May.
2. Did the northern hemisphere sea ice reduction trend trigger the decadal Arctic sea ice oscillations? NCAR, Boulder, CIFAR/IARC PI Meeting, October.
3. Did the northern hemisphere sea ice reduction trend trigger the decadal Arctic sea ice oscillations? International Association of Physical Science in oceanography (IAPSO), Argentina, Nov 21-26.
4. The decadal Arctic sea ice oscillations. The SEARCH (A Study of Environmental Arctic Change) Implementation Workshop. UW/Seattle, Nov. 27-29.

**2002:**

**Invited:**

1. Linking the northern hemisphere sea ice trend and quasi-decadal sea ice oscillation: Hypothesis, observations, and modeling. McGill University, Quebec, May 19.
2. Simulating the seasonal cycle using a coupled ice-ocean model in the pan Arctic-North Atlantic Ocean. AOMIP (Arctic Ocean Models Intercomparison Project) Workshop. Washington, DC, May 30.
3. Modeling shelf-basin interactions in the Arctic Ocean (key note speaker), Workshop on Arctic Circulation modeling and measurement, Lamont-Doberty Earth Observatory, Columbia Univ., June 17-20.

**Oral:**

1. A nested coupled ice-ocean model in the Beaufort Sea. Coastal Marine Institute Workshop on Beaufort Sea. Fairbanks, January 15, 2002.
2. The northern hemisphere sea ice trend and quasi-decadal sea ice oscillation. Ocean Science Meeting, Hawaii, Feb. 2002.
3. Linking the northern hemisphere sea ice trend and quasi-decadal sea ice oscillation. Canadian Meteorological and Oceanographic Society, Rimouski, Quebec, May 14-18.
4. A coupled ice-ocean model in the pan Arctic-North Atlantic Ocean. Canadian Meteorological and Oceanographic Society, Rimouski, Quebec, May 14-18.
5. A nested coupled ice-ocean model in the Beaufort Sea. Workshop on Small-Scale Sea Ice and Ocean Modeling, IARC/Fairbanks, August 7-9, 2002.
6. A coupled ice-ocean model in the pan Arctic-North Atlantic Ocean. Workshop on Small-Scale Sea Ice and Ocean Modeling, IARC/Fairbanks, August 7-9, 2002.
7. A nested coupled ice-ocean model in the Beaufort Sea. IARC-FRSGC and UAF Workshop on Point Barrow Sea Ice Research. IARC/Fairbanks, October 28, 2002.

**2003:**

**Invited:**

1. Wang, J., Small-scale ice-ocean modelling for the nearshore Beaufort and Chukchi seas. MMS Physical Oceanography Workshop, Fairbanks, Feb 4-6, 2003.
2. Wang, J., B. Wu, and M. Jin, Preliminary spinup results and scenario simulations. Arctic

Ocean Model Intercomparison Project Workshop #6, Woods Hole Oceanographic Institution, May 8-9, 2003.

3. Wang, J., M. Ikeda, S. Zhang, and R. Gerdes, Linking the northern hemisphere sea ice trend and quasi-decadal sea ice oscillation: a new feedback loop. First CAMP-FRSGC Collaboration Workshop, Yokohama Institute for Earth Science, Yokohama, June 10, 2003 (as co-chair).
4. Wang, J., M. Jin, and P. McRoy, A 3-D coupled biological-physical model and its application to the 1996 spring plankton bloom in Prince William Sound, Alaska. Prince William Sound Biological Modeling Workshop, Anchorage, June 16-18, 2003
5. Wang, J., B. Wu, M. Jin, Search for causes and drivers: Which atmospheric regime is responsible for sea ice motion in the central Arctic Ocean? The Second CAMP-FRSGC Collaboration Workshop, Yokohama Institute for Earth Science, Yokohama, Nov. 5, 2003 (as co-chair).

#### **Oral:**

1. Wang, J., M. Ikeda, S. Zhang, and R. Gerdes, Linking the northern hemisphere sea ice trend and quasi-decadal sea ice oscillation. AMS 7<sup>th</sup> Conference on Polar Meteorology and Oceanography. Hyannis, MA, May 12-16, 2003.
2. Wang, J., M. Ikeda, and F. Saucier, A coupled ice-ocean model in the pan Arctic-North Atlantic Ocean: Simulations of seasonal cycles. AMS 7<sup>th</sup> Conference on Polar Meteorology and Oceanography. Hyannis, MA, May 12-16, 2003.
3. Wu, B. and J. Wang, Possible feedback of winter sea ice in the Greenland and Barents Seas on the local atmosphere. AMS 7<sup>th</sup> Conference on Polar Meteorology and Oceanography. Hyannis, MA, May 12-16, 2003.
4. Jin, M. and J. Wang, Shelf dense water transport in the Beaufort Sea. AMS 7<sup>th</sup> Conference on Polar Meteorology and Oceanography. Hyannis, MA, May 12-16, 2003.
5. Wang, J., M. Jin, and P. McRoy, A 3-D coupled biological-physical model and its application to the 1996 spring plankton bloom in Prince William Sound, Alaska. The 4<sup>th</sup> International Conference on Ecosystem and Sustainable Development III, Siena, Italy, June 4-6, 2003
6. Wang, J., B. Wu, M. Jin, SEARCH for causes and drivers: Which atmospheric regime is responsible for sea ice motion in the central Arctic Ocean? The Fourth International Workshop on Global change: Connection to the Arctic 2003 (GCCA4), Toyokawa, Japan, Nov. 6-7, 2003.

#### **Poster:**

1. Wang, J., B. Wu, M. Jin, The Arctic Oscillation and Dipole Forcing and Arctic sea ice motion. SEARCH Open Science Meeting, Seattle October 27-29.

#### **2004:**

##### **Invited:**

1. Wang, J., A coupled ice-ocean-oilspill modelling system in the Beaufort Sea. MMS Headquarters, Herndon, VA, March 3, 2004.
2. Wang, J. Search for causes and drivers of Arctic climate variability: Which atmospheric regime is more important in the Arctic Ocean? The joint APL and Dept. of Atmospheric Science Seminar, University of Washington, March 4, 2004.



**Oral:**

1. Wang, J. and M. Jin. An ice-ocean-oilspill modelling system in the Beaufort Sea. CMI/MMS Annual Meeting, Feb. 17, Fairbanks, AK.
2. Wang, J. Search for causes and drivers of Arctic climate variability: Which atmospheric regime is more important in the central Arctic Ocean? The FRSGC Annual Symposium. Yokohama, Japan, March 22-24, 2004.
3. Search for drives and causes of Arctic climate system: relationship between the Arctic Oscillation/Dipole Anomaly and Arctic sea ice. International Chinese Ocean-Atmosphere Conference. June 28-30, 2004, Beijing
4. Dipole Anomaly and Arctic sea ice. The Second International Symposium on Polar Sciences of China. October 15-17, 2004, Beijing

**Poster:**

1. Wang, B. Wu, and M. Jin. A coupled ice-ocean model (CIOM) in the pan Arctic and northern North Atlantic Ocean: Simulation of seasonal cycle. Marine Science in Alaska 2004 Symposium, Jan. 12-14, Anchorage, AK.
2. Wang, B. Wu, M. Jin, J. Walsh and M. Ikeda. The Arctic Oscillation and Dipole Forcing and Arctic sea ice motion. Marine Science in Alaska 2004 Symposium, Jan. 12-14, Anchorage, AK.
3. Wang, J. M. Jin, D. Musgrave. A numerical hydrological digital elevation model and ocean circulation model in the Gulf of Alaska. Marine Science in Alaska 2004 Symposium, Jan. 12-14, Anchorage, AK.

**2005:**

**Invited:**

1. Modeling 3-D environmental hydrodynamic fields of the Bering Sea. Workshop on the Bering Sea Ocean Circulation Modelling, Feb. 3-4, PMEL/NOAA, Seattle.
2. Simulating the seasonal cycle of ice-ocean circulation in the Sea of Okhotsk. Workshop on modelling of sea ice and ocean circulation, with an emphasis on the Sea of Okhotsk, Feb. 18, ILTS, Hokkaido University, Japan
3. Assessment of the CCSR/NIES/FRCGC global model. Feb. 16, CCSR/Tokyo University, Japan

**Oral:**

1. Modeling 3-D environmental hydrodynamic fields of the Bering Sea. Marine Science Meeting in Alaska, Jan. 24-26, Anchorage
2. Vertical mixing effects on the phytoplankton bloom in the southeastern Bering Sea mid-shelf. Marine Science Meeting in Alaska, Jan. 24-26, Anchorage
3. Hydrological modelling in the North Slope. CMI/MMS Annual Review Meeting, March 8. Fairbanks.
4. A coupled ice-ocean-oilspill modelling system (SIOMS) in the Chukchi-Beaufort Seas. MMS Transfer Meeting, Anchorage, March 14-16, 2005.
5. Modeling the 20<sup>th</sup>-21<sup>st</sup> century Arctic climate using the CCSR/NIES/FRCGC global climate model. FRCGC Annual Symposium, March 17-18, Yokohama, Japan.
6. The Arctic winter atmospheric Dipole Anomaly (DA) and sea ice motion: Data analysis and modeling. International Symposium on Sea Ice, Dec. 5-9, Dunedin, New Zealand.

7. Controls of the landfast ice-ocean ecosystem offshore Barrow, Alaska. International Symposium on Sea Ice, Dec. 5-9, Dunedin, New Zealand.

**Poster:**

1. The Arctic dipole anomaly and sea ice motion. Jan. 9-14, AMS Meeting, San Diego.
2. Search for drivers and causes of Arctic climate system: the relationship between the Arctic Oscillation and Dipole Anomaly and sea ice. EGU, Vienna, April 24-29, 2005. (solicited)
3. Evaluating the Earth Simulator global coupled ice-ocean module of the CCSR/NIES/FRCGC climate model. EGU, Vienna, April 24-29, 2005.

**2006:**

**Invited:**

1. Sea ice-ocean-oil spill modeling system (SIOMS) for the nearshore Beaufort and Chukchi Seas: improvement and parameterization (Phase II). Feb 14, CMI/MMS Annual Research Review Meeting, Fairbanks, Alaska.
2. IARC Arctic Modeling Group Activities: Modeling and climate change studies, Advancing Science and Technology in Arctic Climate Change Research, Fairbanks, March 6th, 2006.
3. The Arctic winter atmospheric Dipole Anomaly (DA) and sea ice motion: Data analysis and modeling. April 4-7, Old Dominion University, Norfolk, Virginia.
4. Modeling the 20<sup>th</sup> century Arctic climate using the CCSR/NIES/FRCGC global climate model. Workshop on Polar-Global Climate Modeling: Connection and Interplay. June 14-16, Fairbanks, Alaska.
5. Sea Ice-Ocean-oilspill Modeling System (SIOMS) for the nearshore Beaufort and Chukchi Seas: Improvement and parameterization (Phase II). May 24, MMS Modeling Review Board Meeting, MMS Headquarters, Herndon, Virginia. (oral)
6. Arctic atmospheric Dipole Anomaly and sea ice export as simulated using a climate GCM. UCLA, LA, Oct. 18, 2006
7. Simulating downscaling ice-ocean characteristics in the Beaufort-Chukchi seas using an IARC Coupled Ice-Ocean Model (CIOM). GLERL, NOAA, Ann Arbor, Oct. 30.

**Oral:**

1. Wang, J. and H. Hu, 2006: Downscaling ice-ocean characteristics in the Beaufort-Chukchi seas simulated by an IARC Coupled Ice-Ocean Model (CIOM). Jan 22-25, Marine Science Symposium, Anchorage.
2. Jin, M. and J. Wang, 2006: Development of coupled ice-ocean ecosystem and application to the ice-core data in land fast ice offshore Barrow. Jan 22-25, Marine Science Symposium, Anchorage.
3. Hu, H. and J. Wang, 2006: Modeling the Bering Sea Thermodynamic Characteristics Using an IARC Coupled Ice-Ocean Model (CIOM). Jan 22-25, Marine Science Symposium, Anchorage.
4. Mizobata, K. and J. Wang, 2006: Summer chlorophyll distributions related to the runoff-ocean-ice interaction in the Beaufort/Chukchi Sea. Jan 22-25, Marine Science Symposium, Anchorage.
5. Wang, J. 2006: Modeling the 20<sup>th</sup> century Arctic climate using a global climate model. AGU Fall Meeting, San Francisco, Dec. 10-15, 2006.

**Poster:**

1. Deal, C.J., M. Jin, J. Wang and N. Tanaka, January 2006. An ecosystem model study of plankton and nutrient dynamics on the Bering Sea shelf with a focus on the nitrogen budget and water column nitrification, Exxon Valdez Marine Science Symposium, Anchorage, Alaska, poster presentation.
2. Jin, M., C. Deal, J. Wang, 2006: Controls of the landfast ice-ocean ecosystem offshore Barrow, Alaska. Ocean Science Meeting, Feb. 20-24, Honolulu.
3. Hu, H. and J. Wang, 2006: Modeling the Bering Sea Thermodynamic Characteristics Using an IARC Coupled Ice-Ocean Model (CIOM). Ocean Science Meeting, Feb. 20-24, Honolulu.
4. Mizobata, K. and J. Wang, 2006: Summer chlorophyll distributions related to the runoff-ocean-ice interaction in the Beaufort/Chukchi Sea. Ocean Science Meeting, Feb. 20-24, Honolulu.
5. Zhang, S. and J. Wang, 2006: Coupling the CICE3.1 to ROMS. Ocean Science Meeting, Feb. 20-24, Honolulu.
6. Wang, J. and H. Hu, 2006: Downscaling ice-ocean characteristics in the Beaufort-Chukchi seas simulated by an IARC Coupled Ice-Ocean Model (CIOM). Ocean Science Meeting, Feb. 20-24, Honolulu.
7. Wang, J., H. Hu, K. Mizobata, M. Jin, 2006: Downscaling ice-ocean characteristics in the Beaufort-Chukchi seas simulated by an IARC Coupled Ice-Ocean Model (CIOM). ARCUS 18th Annual Arctic Forum, Washington D.C., May 25-26.
8. Modeling the 20<sup>th</sup> century Arctic climate using the CCSR/NIES/FRCGC global climate model. Workshop on Polar-Global Climate Modeling: Connection and Interplay. ARCUS 18th Annual Arctic Forum, Washington D.C., May 25-26.

#### **2007:**

##### **Invited:**

1. Sea ice-ocean-oil spill modeling system (SIOMS) for the nearshore Beaufort and Chukchi Seas: improvement and parameterization (Phase II). Feb 6, CMI/MMS Annual Research Review Meeting, Fairbanks, Alaska.
2. Wang, J. IARC Arctic modeling progress: Combination of large-scale and downscaling simulation. The JAMSTEC Annual Symposium. Yokohama, Japan, March 19-20, 2007.
3. Wang, J. Model-data fusion studies in the Beaufort-Chukchi seas. Pacific Arctic (Country) Group (PAG) Model-Data Fusion Workshop, Ottawa, October, 2007.
4. Wang, J. Model-data fusion studies in the Beaufort-Chukchi seas. US-China Arctic IPY Cruise Planning, D.C., October, 2007

##### **Oral:**

1. Wang, J., Arctic climate variability in the 20<sup>th</sup> century. Jan 21-24, Marine Science Symposium, Anchorage.
2. Jin, M. and J. Wang: Sea ice algae modeling in the Bering Sea. Jan 21-24, Marine Science Symposium, Anchorage.
3. Wang, J. Dipole Anomaly determined from the 20<sup>th</sup> century GCM simulation. GCCA7, Fairbanks, Feb. 19-20.
4. Modeling Ocean Circulation in the North Aleutian Basin. Sep 8, MMS Headquarters, Herndon, VA.
5. Modeling sea ice-ocean-oil spill system (SIOMS) for the nearshore Beaufort and Chukchi Seas, IAGLR, College City, PennState, May 2007.

**Poster:**

1. Wang, J. H. Hu, and K. Mizobata: Downscaling ice-ocean characteristics in the Beaufort-Chukchi seas simulated by an IARC Coupled Ice-Ocean Model (CIOM). AYK-SSI Science Meeting, Feb 6-8, Anchorage.

**2008:**

**Invited:**

- Wang, J. Model-data fusion study in the Bering Sea using CIOM. Pacific Arctic (Country) Group (PAG) Model-Data Fusion Workshop, Sanya, China, Feb. 18-20, 2008.
- Wang, J., 2008. Modeling sea ice and ocean circulation in the Bering Sea, Hokkaido University T/S Oshoro-Marui, July 16, Alaska
- Wang, J., 2008. Dipole Anomaly drove the 2007 Arctic sea ice minimum, Dutch Harbor Museum, Alaska (outreach to local community), July 17.
- Wang, J. 2008. Projections of the Great Lakes Climate in the 21<sup>st</sup> Century and Coupled Lake-Ice Modeling, Workshop of Impact of Climate Change on the Great Lakes Ecosystems. July 19-22, Ann Arbor, MI
- Wang, J., Arctic Dipole Anomaly drove the 2007 Arctic sea ice minimum: Implication to ecosystems in the North Atlantic, NW Atlantic GLOBEC Workshop, New Hampshire, Oct, 2008
- Wang, J. 2008. Climate change and the changing role of freshwater and sea ice. US-Canada GEO Workshop. Oct. 28-30, Arlington, VA

**Oral:**

- Wang, J., K. Mizobata, and H. Hu: Development of the Beaufort-Chukchi seas Coupled Ice-Ocean Model (CIOM). 2008 Alaska Marine Symposium, Jan. 20-24, Anchorage.
- Wang, J., Dipole Anomaly determined from the 20<sup>th</sup> century GCM simulation. The 2008 Ocean Science Meetings, Orlando, FL, March 2-5.
- Hu, H and Wang, J., Modeling the Bering Sea ice and ocean circulation. The 2008 Ocean Science Meetings, Orlando, FL, March 2-5.
- Mizobata, K. and J. Wang. Modeling Beaufort and Chukchi seas ice and ocean circulation. Pacific Arctic (Country) Group (PAG) Model-Data Fusion Workshop, Sanya, China, Feb. 18-20, 2008.
- Wang, J. and H. Hu, Development of the Great Lakes Ice Model (GLIM). IAGLR's 51<sup>st</sup> Annual Conference on Great Lakes Research, May 19-23, 2008, Peterborough, Ontario
- Wang, J. 2008. Projections of the Great Lakes Climate in the 21<sup>st</sup> Century and Coupled Lake-Ice Modeling, Workshop of Impact of Climate Change on the Great Lakes Ecosystems. July 19-22, Ann Arbor, MI
- Bai, X. and J. Wang, 2008. Interannual Variability of Lake Ice and Internal Climate Teleconnection Patterns. Workshop of Impact of Climate Change on the Great Lakes Ecosystems. July 19-22, Ann Arbor, MI
- Wang, J., 2008. Dipole Anomaly drove the 2007 Arctic sea ice minimum, International Symposium on Arctic Research, Tokyo, Japan, Nov. 4-6, 2008.

**Poster:**

- Hu, H and Wang, J., Modeling the Bering Sea circulation and the cold pool. 2008 Alaska

- Marine Symposium, Jan. 20-24, Anchorage.
- Mizobata, K., J. Wang, and H. Hu: Sensitivity study of the Beaufort-Chukchi seas ice-ocean circulation. 2008 Alaska Marine Symposium, Jan. 20-24, Anchorage.
- Wang, J. and J. Zhang, 2008. Dipole Anomaly drove the 2007 Arctic sea ice minimum, ARCUS 2008 Annual Meeting, May 14-15, D.C.
- Wang, J., 2008. Ice-ocean-ecosystem modeling in the Bering, Chukchi, and Beaufort seas, NOAA Climate Observation Division 6<sup>th</sup> Annual System Review, September 3-5, Silver Spring, D.C.

**2009:**

**Invited:**

- Wang, J., Modeling Great Lakes ice. Canadian Regional Climate Model and Diagnosis Workshop, May 23-29, Montreal
- Wang, J., Development of the Great Lakes Ice-circulation Model (GLIM): Application to Lake Erie. Joint Assembly of IAPSO, IAMAS, IACS, July 19-29, Montreal, Canada (IAPSO--International Association for the Physical Sciences of the Oceans; IAMAS—International Association of Meteorology and Atmospheric Sciences; IACS—International Association of Cryospheric Sciences)
- Wang, J., Seasonal, interannual, and spatial variability of Great Lakes ice cover: Response to a changing climate, Lake Michigan: State of the Lake, Milwaukee, Sep. 29-Oct. 1, 2009
- Wang, J. Winter Arctic Oscillation, Siberian High and East Asian winter monsoon: Driving upwelling in the western Bering Sea. 5<sup>th</sup> International Workshop on Marine Environmental Change of the South China Sea, Dec.3rd -4th .2009, Guangzhou, China

**Oral:**

- Wang, J., Is the Arctic Dipole Anomaly the major driver to Arctic summer sea ice minima? JAMSTEC, Yokohama, March 19, 2009.
- Wang, J., Modeling landfast ice in the Beaufort Sea. NSF Review Meeting, May 11-12, Seattle.
- Wang, J., Arctic sea ice minima and its relationship to Dipole Anomaly. IAGRL, Toledo, May 18-22, 2009
- Wang, J., Seasonal, interannual, and spatial variability of Great Lakes ice cover. IAGRL, Toledo, May 18-22, 2009
- Bai, X., J. Wang, and others, Impacts of ENSO and AO on interannual variability of Great Lakes ice cover. IAGRL, Toledo, May 18-22, 2009
- Hu, H., J. Wang, and others. Modeling Lake Erie ice cover. IAGRL, Toledo, May 18-22, 2009.
- Wang, J., Modeling ice-ocean-ecosystems in the Bering and Chukchi Seas. NOAA Office of Polar Research Review Meeting. Silver Spring, July 17.
- Wang, J., H. Hu, K. Mizobata, and S. Satoh, Seasonal variations of sea ice and ocean circulation in the Bering Sea: A model-data fusion study. Joint Assembly of IAPSO, IAMAS, IACS, July 19-29, Montreal, Canada.
- Wang, J. and E. Watanabe, Arctic Oscillation and Dipole Anomaly and their contribution to sea ice export: A climate modeling study for the period 1900-2010. Joint Assembly of IAPSO, IAMAS, IACS, July 19-29, Montreal, Canada

**Poster:**

- Wang, J., et al. Is the Arctic Dipole Anomaly the major driver to record lows in Arctic summer

sea ice extent? Joint Assembly of IAPSO, IAMAS, IACS, July 19-29, Montreal, Canada

**2010:**

**Keynote Speaker:**

Wang, J., Great Lakes Ice and Climate Research, IAHR 2010 Ice Symposium, Lahti, Finland, June 14-18, 2010

**Invited:**

Wang, J., Arctic Dipole Anomaly is the major driver to Arctic summer sea ice minima: Implication to freshwater transport..Northwest GLOBEC Workshop, Portland, OR, Feb. 20-21, 2010.

Wang, J. Hydrodynamics and ice modeling in the Great Lakes. NASA Great Lakes Workshop, Cleveland, OH, April 12-13, 2010.

Wang, J. Ice modeling and forecasting in the Great Lakes. SOA Ice Forecasting Workshop, Beijing, April 26-28, 2010.

Wang, J. Extreme ice conditions in the Bohai Sea, China and the Great Lakes. SOA Ice Forecasting Workshop, Beijing, April 26-28, 2010.

Wang J., Sea ice forecasting: Statistical and numerical models. NOAA Sea Ice Forecasting Workshop, NOAA ESRL, Boulder, May 11-12, 2010.

Wang, J. Arctic Oscillation and Dipole Anomaly and their contribution to sea ice export: A climate modeling study for the period 1900-2010. IPY Oslo Science Conference, Oslo, June 7-11, 2010.

Wang, J. Why ice minima occurred in 2007, 08, and 09? Canadian Meteorological and Oceanographic Society (CMOS) Annual Meeting, June 1-4, Ottawa.

Wang, J. and H. Hu. Modeling the effects of tidal and wave mixing on circulation and thermohaline structures in the Bering Sea: Process studies. IAHR 2000 Ice Symposium, Lahti, Finland, June 14-18, 2010

Wang, J. Leading Arctic climate patterns and sea ice export: Diagnosis and modeling. SMHI Rossby Centre, Stockholm, Sweden, June 22, 2010.

Wang, J. Leading Arctic climate patterns and sea ice export: Diagnosis and modeling. University of Stockholm, Sweden, June 23, 2010.

Wang, J. Great Lakes ice research. NASA/GRC-NOAA/GLERL Workshop, Ann Arbor, MI July 19, 2010.

Wang, J., How to use numerical theory to guide our modeling exercise? South China Sea Institute of Oceanology, Guangzhou, China, August 16, 2010.

Wang, J. Why ice minima occurred in 2007, 08, and 09? Ocean University of China, Qingdao, China, Sep 1, 2010.

Wang, J. Why ice minima occurred in 2007, 08, and 09? Peking University, Qingdao, China, Sep 3, 2010.

Wang, J. Great Lakes climate and ice research: Diagnosis and modeling. Dept. of Atmospheric, Oceanic, and Space Science (AOSS), University of Michigan, Ann Arbor, November 11, 2010.

Wang, J., X. Bai, M. Colton, A. Clites, B. Lofgren. Temporal and spatial variability, and extreme events of the Great Lakes ice cover: Impacts of ENSO and AO. AGU Fall Meeting, San Francisco, Dec. 13-17, 2010. (NH11C. Land-Ocean-Atmospheric Processes: Implication to Natural Hazards and the Global Carbon Cycle I)

**Oral:**

- Wang, J., X. Bai, G. Leshkevich, M. Colton, A. Clites, and B. Lofgren, Extreme Great Lakes ice cover in the winter of 2008-09: Contribution of +AO and La Nina, IAGRL, Toronto, May 17-21, 2010.
- Wang, J. and H. Hu. Modeling the effects of tidal and wave mixing on circulation and thermohaline structures in the Bering Sea: Process studies. IPY Oslo Science Conference, Oslo, June 7-11, 2010.
- Wang, J. Why ice minima occurred in 2007, 08, and 09? IPY Oslo Science Conference, Oslo, June 7-11, 2010.
- Wang, J. Why ice minima occurred in 2007, 08, and 09? Conference of Cryospheric Change and its Influences: Cryospheric issues in regional sustainable Development. Lijiang, China, August 12-14, 2010
- Wang, J. Seasonal, interannual and spatial variability of the Great Lakes ice cover, 1973-2010. Conference of Cryospheric Change and its Influences: Cryospheric issues in regional sustainable Development. Lijiang, China, August 12-14, 2010
- Wang, J. Why ice minima occurred in 2007, 08, 09, and 10? Second International Symposium on Arctic Research (ISAR-2), Tokyo, 7-9 December 2010.
- Wang, J., Modeling ice-ocean-ecosystem in the Bering-Chukchi seas. Pacific Arctic Group Meeting, Tokyo, Japan, December 10-11, 2010.

**Poster:**

- Wang, J. Why ice minima occurred in 2007, 08, and 09? Alaska Marine Symposium 2010, Jan 18-22, Anchorage.
- Wang, J. and H. Hu, Modeling Bering Sea ice and polynya in 1999. Alaska Marine Symposium 2010, Jan 18-22, Anchorage.
- Wang, J. and Bai, Why ice minima occurred in 2007, 08, and 09? Ocean Sciences Meeting, Feb. 22-26, Portland.
- Hu, H. and Wang, J., Modeling Bering Sea ice and polynya in 1999. Ocean Sciences Meeting, Feb. 22-26, Portland.
- Wang et al. Severe ice cover in the winter 2008/09 in the Great Lake. Ocean Sciences Meeting, Feb. 22-26, Portland.
- Wang, J. and Bai, Why ice minima occurred in 2007, 08, and 09? The State of Arctic Conference, March 16-19, Miami.
- Wang, J. and H. Hu, Modeling Bering Sea ice and polynya in 1999. The State of Arctic Conference, March 16-19, Miami.
- Wang et al. Severe ice cover in the winter 2008/09 in the Great Lake. The State of Arctic Conference, March 16-19, Miami.
- Wang et al. Unstructured-grid Great Lakes Ice-circulation Model (GLIM), Toronto, May 17-21, 2010
- Wang, J. and H. Hu, Modeling Lake Erie ice cover. IAGRL, Toronto, May 17-21, 2010
- Wang, J. and Bai, Why ice minima occurred in 2007, 08, and 09? IPY Oslo Science Conference, Oslo, June 7-11, 2010.
- Wang, J. and Bai, Why ice minima occurred in 2007, 08, 09, and 10? AGU Fall Meeting, San Francisco, Dec. 13-17, 2010.

**2011:****Invited:**

- Wang, J., Modeling ice-ocean-ecosystem in the Bering-Chukchi seas. Arctic Marine Productivity Workshop, February 22-24, 2011, Fairbanks, AK.
- Wang, J. D. Schwab, H. Hu, and G. Lang, Ice Forecasting in the Great Lakes. NOAA Sea Ice Forecast Workshop II, Anchorage, Sep. 19-21, 2011.
- Wang, J. and Bai, Interannual and intraseasonal variability of Arctic DA and summer sea ice Minima. AGU Fall Meeting, San Francisco, Dec. 5-9, 2011.

**Oral:**

- Wang, J., Lake ice climatology and modeling. Great Lakes Restoration Initiative Workshop, Ann Arbor, MI, February 15-16, 2011.
- Wang, J. et al. Great Lakes Ice Research: Diagnosis and modeling. IAGRL, Duluth, May 30-June 3, 2011.
- Bai, X and J. Wang. Severe ice conditions in the Bohai Sea, China and mild ice conditions in the Great Lakes during the 2009/2010 winter: Links to El Niño and a strong negative Arctic Oscillation. IAGRL, Duluth, May 30-June 3, 2011.
- Fujisaki, A, J. Wang, H. Hu, and D. Schwab. Comparison of ice-ocean models for Lake Erie, IAGLR, Duluth, May 30-June 3, 2011.
- Wang, J. and H. Hu, Modeling the effects of tidal and wave mixing on circulation and thermohaline structures in the Bering Sea: Process studies. IUGG, Melbourne, June 28-July 7, 2011.
- Wang, J. and H. Hu, Modeling ice-covered marine ecosystem in the Bering and Chukchi seas. IUGG, Melbourne, June 28-July 7, 2011.
- Wang, J. and H. Hu, Modeling Implementation of an unstructured-grid Great Lakes Ice-circulation Model (GLIM) for Great Lakes Earth System Model (GLESIM). IUGG, Melbourne, June 28-July 7, 2011.
- Wang, J. and X. Bai, Can we project future Arctic summer ice minima using DA index? IUGG, Melbourne, June 28-July 7, 2011.
- Wang, J. Great Lakes Ice Research: Diagnosis and modeling. PPNW (Physical Processes in Natural Waters) Symposium, Burlington, July 11-14, 2011
- Wang, J., X. Bai, H. Hu, A. Clites, M. Colton, and B. Lofgren, Temporal and spatial variability of Great Lakes ice cover, 1973-2010, Coastal Zone 2011, Chicago, July 18-21, 2011.
- Wang, J., X. Bai, H. Hu, A. Clites, M. Colton, and B. Lofgren, Temporal and spatial variability of Great Lakes ice cover, 1973-2010, State of Lake Michigan, Michigan City, Sep. 26-28, 2011.

**Poster:**

- Hu, H., J. Wang, J. Schwab, G. Leshkevich. Simulation of Lake Erie ice from 2007-2010, IAGLR, Duluth, May 30-June 3, 2011.
- Luo, L, and J. Wang. Modeling ecosystem in Lake Michigan, IAGLR, Duluth, May 30-June 3, 2011.
- Hu, H. and Wang, J. Lake ice modeling in the Great Lakes, Coastal Zone 2011, Chicago, July 18-21, 2011.
- Bai, X. and Wang, J., Interannual variability of Great Lakes ice cover and its relationship to NAO and ENSO, Coastal Zone 2011, Chicago, July 18-21, 2011.
- Wang, J., X. Bai, H. Hu, A. Clites, M. Colton, and B. Lofgren, Temporal and spatial variability of Great Lakes ice cover, 1973-2010, AGU Fall Meeting, San Francisco, Dec. 5-9, 2011.



**2012:****Invited:**

- Wang, J. and X. Bai. Interannual and intraseasonal variation of Arctic Dipole Anomaly pattern and summer ice minima. 2012 LASG International Summer Symposium: Climate variability and its changes, Xining, China, July 3-5, 2012.
- Wang, J., Seasonal and Interannual variability of Great Lakes ice cover: Linking to atmospheric teleconnection patterns. UW-Milwaukee, Sep. 20, 2012.
- Wang, J., Modeling ice-ocean-ecosystem in the Bering and Chukchi Seas in 2004 and 2009 RUSALCA cruises. Pacific Arctic (Country) Group (PAG) Workshop, Nov. 5-6, 2012, Suzhou, China.
- Wang, J., Parameterization of surface wind-wave mixing into ocean GCM. Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, Nov. 7, 2012.
- Wang, J., Can we project future Arctic summer ice minima using DA index? Polar Research Institute of China, Nov. 8, 2012, Shanghai, China.
- Wang, J., Modeling ice-ocean-ecosystem in the Bering and Chukchi Seas in 2007-2008. Polar Research Institute of China, Nov. 9, 2012, Shanghai, China.
- Wang, J., Interannual and intraseasonal variability of Arctic DA and summer sea ice Minima. Nov. 9, 2012, Shanghai Ocean University, Shanghai, China.
- Wang, J. Great Lakes record-breaking ice cover in the winter of 2011/12, USCG Icebreaker Conference: Windsor, Canada, Oct 25, 2012 (invited):
- Wang J., Great Lakes ice and climate, Offshore Wind Energy Workshop, Ann Arbor, MI  
Nov 28-29, 2012

**Oral:**

- Wang, J., Teleconnection patterns associated with severe and mild ice cover in the Great Lakes, Workshop on Method of Projecting Hydrologic Impacts of Climate Change, Muskegon, MI, August 27-29, 2012.
- Wang, J., and H. Hu, Modeling sea ice and ecosystem in the Bering and Chukchi Seas. NOAA RUSALCA PIs Workshop, March 9-11, 2012, Miami, FL.
- Wang, J. and Bai, Interannual and intraseasonal variability of Arctic DA and summer sea ice Minima. IPY Conference, Montreal, Canada, April 23-27, 2012.
- Fujisaki, A, J. Wang, H. Hu, and D. Schwab. Simulating interannual variability of lake ice in Lake Erie. IAGLR, Cornwall, Canada, May 14-17, 2012.
- Bai, X. and Wang, J., Modeling 5 Great Lakes circulation and thermal structure using FVCOM. IAGLR, Cornwall, Canada, May 14-17, 2012.
- Wang, J., Bai, X., Teleconnection patterns associated with severe and mild ice cover in the Great Lakes, IAGLR, Cornwall, Canada, May 14-17, 2012.
- Wang, J., X. Bai, L. Luo, Y. Yang, S Schwab, and B. Lofgren, Implementation of an unstructured-grid Great Lakes Ice-circulation-ecosystem model, IAHR International Symposium on Ice, Dalian, China, June 10-15, 2012
- Bai, X. and Wang, et al, Severe ice conditions in the Bohai Sea, China vs. mild ice conditions in the Great Lakes during the 2009/2010 winter with strong -AO and El Niño. IAHR International Symposium on Ice, Dalian, China, June 10-15, 2012

**Poster:**

- Hu, H., J. Wang. Modeling Bering Sea ice and St Lawrence Island polynya. Ocean Science Meeting, Feb, 2012, Salt Lake City, UT.
- Luo, L, and J. Wang. Modeling ecosystem in Lake Michigan, Ocean Science Meeting, Feb, 2012, Salt Lake City, UT.
- Bai, X. and Wang, J., Modeling 5 Great Lakes circulation and thermal structure using FVCOM. IPY Conference, Montreal, Canada, April 23-27, 2012.
- Wang, J., and H. Hu, Modeling sea ice and ecosystem in the Bering and Chukchi Seas. Ocean Science Meeting, Feb, 2012, Salt Lake City, UT.
- Fujisaki, A, J. Wang, H. Hu, and D. Schwab. Simulating interannual variability of lake ice in Lake Erie. Ocean Science Meeting, Feb, 2012, Salt Lake City, UT.
- Bai, X. and Wang, J., Modeling 5 Great Lakes circulation and thermal structure using FVCOM. IAGLR, Cornwall, Canada, May 14-17, 2012.
- Hu, H. and J. Wang, Modeling sea ice and ecosystem in the Bering and Chukchi Seas. IAGLR, Cornwall, Canada, May 14-17, 2012.
- Luo, L, and J. Wang. Modeling ecosystem in Lake Michigan, IAGLR, Cornwall, Canada, May 14-17, 2012.

**2013:**

**Invited:**

**Oral:**

Wang, J., Modeling ecosystem in Lake Michigan, Workshop on Great Lake Ecosystem, Wayne State University, Detroit, March 11-13.

Wang, J. Modeling seasonal cycle of ice-ocean-ecosystem in the Bering and Chukchi Seas. Columbia Univ., New York, NASA Project Workshop, March 14-15

WANG, J., X. BAI, J. Austin, R.A. ASSEL, J.F. BRATTON, M.C. COLTON, J. Lenters, B.M. LOFGREN, D.J. SCHWAB, and A.H. CLITES. A record breaking low ice cover over the Great Lakes during winter 2011/2012. 56th Annual Conference of the International Association for Great Lakes Research, Purdue University, W. Lafayette, IN, June 2-6, 2013 (2013).

Wang J. and X. Bai, Modeling seasonal and interannual variability of lake circulation using a 5-lake model. International Workshop on Physical Processes in Natural Waters (PPNW), Gold Coast, Australia, July 8-11, 2013

Wang J, Progress of lake circulation and ecosystem modeling using FVCOM. NOAA Workshop on FVCOM, Silver Spring, July 23-24.

**Poster:**

Wang, J. and Hu, H, Modeling sea ice and ecosystem in the Bering and Chukchi Seas. Alaska Marine Science Symposium, Jan. 22-25, 2013, Anchorage, AK.

**2014:**

**Invited:**

Arctic Dipole Anomaly accelerates summer sea ice decline. Polar Research Institute of China, Shanghai, China, Dec. 15, 2014

Modeling landfast ice in the Beaufort and Chukchi Seas using CIOM. Polar Research Institute of China, Shanghai, China, Dec. 17, 2014

**Oral:**

Great Lakes Ice-circulation-ecosystem Modeling, Ocean Science Meeting, Honolulu Feb. 24-28

Modeling ice-ocean-ecosystem in the Beaufort and Chukchi seas, RUSALCA Workshop, Feb. 21-22, Honolulu

Accelerating Arctic summer sea ice decline by Arctic Dipole Anomaly, RUSALCA Workshop, Feb. 21-22, Honolulu

Great Lakes Ice and Climate: From research to forecasts. GLERL Brown Bag Seminar, Jan. 18, 2014.

Modeling Great Lakes ice-lake-ecosystem using a unstructured-grid model, UGV-GLERL Lake Michigan-Muskegon Lake Workshop, April 28-29, 2014, Muskegon, MI

Great Lakes Ice and Climate: From research to forecasts. 57<sup>th</sup> Annual Meeting of IAGLR, Hamilton, ON, May 26-30, 2014.

Modeling Lake Michigan spring bloom using a unstructured-grid model with and without river loaded nutrients. 57<sup>th</sup> Annual Meeting of IAGLR, Hamilton, ON, May 26-30, 2014.

Bai, X. J. Wang et al. A Record-Breaking Low Ice Cover over the Great Lakes during Winter 2011/2012: Combined Effects of a Strong Positive NAO and La Niña, 57<sup>th</sup> Annual Meeting of IAGLR, Hamilton, ON, May 26-30, 2014.

DeMarchi, C., J. Wang et al. Comparing Coupled Hydrosphere Atmosphere Research Model (CHARM) Simulation of Great Lakes Water Temperature to the FVCOM Model Simulation and Experimental Data, 57<sup>th</sup> Annual Meeting of IAGLR, Hamilton, ON, May 26-30, 2014.

Mason, L.A., J. Wang et al. Fine scale Analysis of Changes in Surface Water Temperature and Ice Cover in the North American Great Lakes 57<sup>th</sup> Annual Meeting of IAGLR, Hamilton, ON, May 26-30, 2014.

Manome, A.F., J. Wang, and X. Bai, Ice hydrodynamic coupled simulation in Lake Erie with FVCOM, 57<sup>th</sup> Annual Meeting of IAGLR, Hamilton, ON, May 26-30, 2014.

Rowe, M.D., J. Wang, et al. Modeling the Effects of Stratification and Bathymetry on the Interaction of Phytoplankton and Invasive Quagga Mussels in Nearshore Lake Michigan, 57<sup>th</sup> Annual Meeting of IAGLR, Hamilton, ON, May 26-30, 2014.

Modeling seasonal and interannual variability and thermal structure in the Great Lakes with FVCOM, 6th International Workshop on Modeling the Ocean, Halifax, NS, June 23-26, 2014

Modeling spring bloom in Lake Michigan using a unstructured-grid coupled physical-biological model, 17th International Workshop in Physical Processes in Natural Waters, Trento, Italy, July 1-4.

Wang, J. X. Bai, J. Bratton, 2014 Accelerating Arctic Summer Sea Ice Decline Driven By Dipole Anomaly, International Symposium on Ice, Singapore, August 11-15, 2014.

Wang, J. X. Bai, A. Manome, H. Hu, and D. Beletsky, 2014. Great Lakes Ice and Climate Research and Forecast. International Symposium on Ice, Singapore, August 11-15, 2014.

Beletsky, B. R. Beletsky, H. Hu, J. Wang, and N. Hawley, 2014. Modeling Thermal Structure, Circulation and Ice In Lake. Erie International Symposium on Ice, Singapore, August 11-15, 2014.

**Poster:**

Hu, H., J. Wang, et al. Simulation of ice and circulation in Lake Erie. 57<sup>th</sup> Annual Meeting of IAGLR, Hamilton, ON, May 26-30, 2014.

Beletsky, R. D. Beletsky, N. Hawley, J. Wang, 2014: Interannual Variability of Winter Circulation and Ice in Lake Erie, International Symposium on Ice, Singapore, August 11-15, 2014.

**2015:**

**Invited:**

Wang, J. Time integration schemes and their stabilities: CFL, non-linear, inertial stability or global stability? Workshop on Development and Application in Ocean Models, July 29, SCSIO, Guangzhou, China.

Wang, J. Wang, D.-R, Y. Yang, J. Wang, and X. Bai, 2015, A Modeling Study of the Effects of River Runoff, Tides, and Surface Wind-Wave Mixing on the Eastern and Western Hainan Upwelling Systems of the South China Sea, China. Workshop on Development and Application in Ocean Models, July 29, SCSIO, Guangzhou, China.

Wang, J., A numerical study on the relationships of the variations of volume transport around the China Seas. Workshop on Development and Application in Ocean Models, July 29, SCSIO, Guangzhou, China.

Wang, J., A numerical study on the relationships of the variations of volume transport around the China Seas. Workshop on Development and Application in Ocean Models, Nov 1, 2015, QDIO/CAS, Guangzhou, China.

Wang, J., Interannual and decadal variability of Great Lakes ice cover, 1973-2015: Development of multi-variable regression hindcast models. 8th International Workshop on

Tropical Marine Environmental Changes: “Tropical Indo-Pacific Ocean: From climate change to ocean environment response” November 7-8, Guangzhou, China

**Oral:**

Wang, J. Seasonal Prediction of Great lakes Ice cover: From Research to Forecast, CGU-AGU Joint Assembly, Montreal, Quebec, May 3-7.

Wang, J. and X. Bai, Seasonal Prediction of Great lakes Ice cover using indices of interannual and decadal teleconnection patterns, IAGLR, Burlington, VT, May 25-29.

Bai, X. and J. Wang, Great Lakes ice surface heat budget analysis: 1979-2012, IAGLR, Burlington, VT, May 25-29.

Manome, A., Wang, J. and Hall, D., Ice-Hydrodynamic Simulation with Data Assimilation of Satellite-Derived Ice Surface Temperature, IAGLR, Burlington, VT, May 25-29.

Hu, H., J. Wang, and D. Beletsky, Modeling Lake Erie ice dynamic and thermodynamic processes, IAGLR, Burlington, VT, May 25-29.

Wang, J. A numerical study on the relationships of the variations of volume transport around the China Seas, Workshop on Development and Application in Ocean Models, July 29, Guangzhou, China.

Wang, J. A Modeling Study of the Effects of River Runoff, Tides, and Surface Wind-Wave Mixing on the Eastern and Western Hainan Upwelling Systems of the South China Sea, China. Workshop on Development and Application in Ocean Models, July 29, Guangzhou, China.

Wang, J., A. Monome, and X. Bai, Modeling five Great Lakes ice-circulation system using an unstructured-grid coupled model, 18<sup>th</sup> Physical Processes in Natural Waters, Landau, Germany, August 24-28.

Wang, J., A. Monome, and X. Bai, Modeling five Great Lakes ice-circulation system using a modified unstructured-grid coupled model, FVCOM Workshop, Silver Spring, MD, Sep 3-4.

Wang, J., Modeling Arctic sea ice and ocean circulation using CIOM, Pacific Arctic Group (PAG) Fall Meeting, October 28-29, 2015, Incheon, Korea

Wang, J. *A modelling study of coastal circulation and landfast ice in the nearshore Beaufort and Chukchi seas using CIOM*. Sea Ice Modeling Working Group 16<sup>th</sup> Annual Meeting, Montreal, Canada, Dec. 3-4. Organizer: Envi. Canada

**2015:**

**Invited:**

**Oral:**

Wang, J., GLERL's research and development of coupled ice-ocean models, Sea Ice Workshop, UCAR, Boulder, Feb 2-4, 2016

**Poster:**

Wang J. et al. Modeling Great Lakes ice-circulation system using an unstructured model, Ocean Science Meeting, Feb. 22-26, 2016, New Orleans, LS.

Manome, A., J. Wang, Modeling Lake Erie ice cover using FVCOM, Ocean Science Meeting, Feb. 22-26, 2016, New Orleans, LS.

Hu, H. and J. Wang, Modeling ecosystem in the Bering-Chukchi seas, Ocean Science Meeting, Feb. 22-26, 2016, New Orleans, LS.